

NEBRASKA OECD TRACTOR TEST 1921—SUMMARY 591

JOHN DEERE 7130 POWRQUAD-PLUS DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1038 rpm)					
101.98 (76.05)	2301	6.75 (25.54)	0.464 (0.282)	15.11 (2.98)	
Standard Power Take-off Speed (1000 rpm)					
109.04 (81.31)	2214	6.95 (26.32)	0.447 (0.272)	15.69 (3.09)	
Maximum Power (1 hour)					
117.50 (87.62)	1900	7.13 (26.98)	0.425 (0.259)	16.48 (3.25)	

VARYING POWER AND FUEL CONSUMPTION

101.98 (76.05)	2301	6.75 (25.54)	0.464 (0.282)	15.11 (2.98)	Air temperature
89.61 (66.82)	2382	6.45 (24.41)	0.504 (0.307)	13.90 (2.74)	80°F (27°C)
68.60 (51.16)	2412	5.55 (21.01)	0.567 (0.345)	12.36 (2.44)	Relative humidity
46.15 (34.41)	2437	4.68 (17.71)	0.711 (0.432)	9.86 (1.94)	15%
22.98 (17.14)	2453	4.17 (15.77)	1.270 (0.773)	5.52 (1.09)	Barometer
1.70 (1.26)	2460	3.12 (9.94)	12.918 (7.858)	0.54 (0.11)	28.79 Hg (97.50 kPa)

Maximum torque - 343 lb.-ft. (465 Nm) at 1449 rpm

Maximum torque rise - 47.1%

Torque rise at 1847 engine rpm - 42%

Power increase at 1900 engine rpm - 15.2%

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th (C1) Gear									
94.11 (70.18)	7212 (32.08)	4.89 (7.88)	2293	3.19	0.500 (0.304)	14.03 (2.76)	179 (82)	45 (7)	28.90 (97.87)
75% of Pull at Maximum Power—8th (C1) Gear									
74.20 (55.33)	5401 (24.02)	5.15 (8.29)	2396	2.45	0.558 (0.339)	12.57 (2.48)	178 (81)	52 (11)	28.90 (97.87)
50% of Pull at Maximum Power—8th (C1) Gear									
50.82 (37.90)	3624 (16.12)	5.26 (8.46)	2427	1.68	0.683 (0.416)	10.26 (2.02)	175 (80)	54 (12)	28.89 (97.83)
75% of Pull at Reduced Engine Speed—11th (C3) Gear									
74.22 (55.35)	5406 (24.05)	5.15 (8.29)	1661	2.47	0.487 (0.296)	14.39 (2.83)	175 (79)	53 (12)	28.89 (97.83)
50% of Pull at Reduced Engine Speed—11th (C3) Gear									
50.66 (37.78)	3615 (16.08)	5.26 (8.46)	1681	1.69	0.532 (0.324)	13.18 (2.60)	172 (78)	55 (13)	28.88 (97.80)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: March 26-April 29, 2008

Manufacturer: John Deere Tractor Works, 3500 East Donald Street, P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8419 Fuel weight 7.010 lbs/gal (0.840 kg/l) Oil SAE 15W-40 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 24.5 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *PE6068L026109* **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.19 x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 414 cu in (6788 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prestrainer **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 44.1 - 48.5 lb/h (20.0 - 22.0 kg/h) **High idle:** 2410 - 2510 rpm **Turbo boost:** nominal 11.6 - 14.5 psi (80 - 100 kPa) as measured 13.2 psi (91 kPa)

CHASSIS: Type front wheel assist **Serial No.** *RW7130H004327* **Tread width** rear 63.0" (1601 mm) to 85.7" (2178 mm) front 59.4" (1510 mm) to 88.0" (2235 mm) **Wheelbase** 104.3" (2650 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 1.53 (2.46) second 1.84 (2.96) third 2.21 (3.55) fourth 2.70 (4.35) fifth 3.06 (4.93) sixth 3.69 (5.94) seventh 4.42 (7.11) eighth 5.04 (8.11) ninth 5.41 (8.71) tenth 6.07 (9.77) eleventh 7.27 (11.70) twelfth 8.90 (14.33) thirteenth 10.38 (16.70) fourteenth 12.50 (20.11) fifteenth 14.96 (24.09) sixteenth 18.34 (29.51) reverse 1.60 (2.57), 1.92 (3.09), 2.30 (3.70), 2.82 (4.54), 3.20 (5.15), 3.85 (6.20), 4.61 (7.42), 5.26 (8.47), 5.65 (9.09), 6.33 (10.19), 7.59 (12.21), 9.30 (14.96), 10.83 (17.43), 13.04 (20.99), 15.62 (25.14), 19.13 (30.79)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2300 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
4th(A4) Gear									
83.37 (62.17)	12385 (55.09)	2.52 (4.06)	2364	9.66	0.560 (0.340)	12.52 (2.47)	177 (81)	41 (5)	28.94 (98.00)
5th(B1) Gear									
90.72 (67.65)	11929 (53.06)	2.85 (4.59)	2305	7.70	0.513 (0.312)	13.66 (2.69)	178 (81)	43 (6)	28.93 (97.97)
6th(B2) Gear									
91.66 (68.35)	9729 (43.28)	3.53 (5.69)	2298	4.72	0.511 (0.311)	13.72 (2.70)	178 (81)	46 (8)	28.93 (97.97)
7th(B3) Gear									
94.79 (70.69)	8305 (36.94)	4.28 (6.89)	2299	3.69	0.491 (0.299)	14.26 (2.81)	179 (82)	46 (8)	28.88 (97.80)
8th(C1) Gear									
94.11 (70.18)	7212 (32.08)	4.89 (7.88)	2293	3.19	0.500 (0.304)	14.03 (2.76)	179 (82)	45 (7)	28.90 (97.87)
9th(B4) Gear									
90.48 (67.47)	6405 (28.49)	5.30 (8.52)	2302	2.81	0.523 (0.318)	13.41 (2.64)	178 (81)	47 (8)	28.88 (97.80)
10th(C2) Gear									
91.06 (67.90)	5745 (25.56)	5.94 (9.56)	2298	2.55	0.518 (0.315)	13.53 (2.67)	178 (81)	46 (8)	28.90 (97.87)
11th(C3) Gear									
92.27 (68.80)	4849 (21.57)	7.14 (11.48)	2294	2.13	0.503 (0.306)	13.95 (2.75)	178 (81)	48 (9)	28.86 (97.73)
12th(C4) Gear									
87.14 (64.98)	3720 (16.55)	8.78 (14.14)	2293	1.62	0.543 (0.330)	12.91 (2.54)	180 (82)	49 (9)	28.83 (97.63)

Clutch wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2143 engine rpm or 1000 rpm at 2208 engine rpm **Unladen tractor mass** 12340 lb (5597 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the fuel pump inlet was maintained at 129°F (54°C). This tractor did not meet the manufacturer's 3 point lift claim of 7450 lb (3379 kg), with 75 mm cylinders. The manufacturer's claim of 35% torque rise with the 2V-CR PowerTech E engine was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1921**, Nebraska Summary 591, September 17, 2008.

Roger M. Hoy
 Director

M.F. Kocher
 V.I. Adamchuk
 J.A. Smith
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Comfortgard Cab	Premium cab	
	2WD dB(A)	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th (B3) gear	69.1	71.0	70.7
Transport speed - no load - 16th (D4) gear	71.6		71.9
Bystander in 16th (D4) gear			81.8

TIRES, BALLAST AND WEIGHT

Rear Tires - No., size, ply & psi(kPa)
Front Tires - No., size, ply & psi(kPa)
Height of Drawbar
Static Weight with operator - Rear
 - Front
 - Total

Tested without ballast

Two 480/80R38;***;12(85)
 Two 380/85R28;***;11(75)
 20.0 in (510 mm)
 7745 lb (3513 kg)
 4770 lb (2164 kg)
 12515 lb (5677 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 1900 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. ^o F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th(A4)Gear									
83.46 (62.24)	12324 (54.82)	2.54 (4.09)	2367	9.19	0.556 (0.338)	12.61 (2.48)	177 (80)	41 (5)	28.94 (98.00)
5th(B1) Gear									
91.07 (67.91)	11979 (53.29)	2.85 (4.59)	2303	7.62	0.512 (0.312)	13.68 (2.69)	178 (81)	43 (6)	28.93 (97.97)
6th(B2) Gear									
99.36 (74.09)	11762 (52.32)	3.17 (5.10)	2114	7.13	0.490 (0.298)	14.30 (2.82)	179 (81)	48 (9)	28.92 (97.93)
7th(B3)Gear									
105.09 (78.36)	11435 (50.87)	3.45 (5.55)	1902	6.26	0.468 (0.285)	14.98 (2.95)	182 (83)	47 (8)	28.88 (97.80)
8th(C1)Gear									
106.56 (79.46)	10083 (44.85)	3.96 (6.38)	1891	4.92	0.464 (0.282)	15.12 (2.98)	181 (83)	45 (7)	28.90 (97.87)
9th(B4) Gear									
104.79 (78.14)	9099 (40.48)	4.32 (6.95)	1903	4.19	0.473 (0.288)	14.83 (2.92)	181 (83)	48 (9)	28.87 (97.77)
10th(C2)Gear									
105.64 (78.77)	8183 (36.40)	4.84 (7.79)	1893	3.65	0.470 (0.286)	14.92 (2.94)	181 (83)	46 (8)	28.89 (97.83)
11th(C3)Gear									
107.11 (79.87)	6869 (30.56)	5.85 (9.41)	1897	3.00	0.465 (0.283)	15.09 (2.97)	180 (82)	49 (9)	28.84 (97.66)
12th(C4) Gear									
102.24 (76.24)	5278 (23.48)	7.26 (11.69)	1909	2.26	0.496 (0.301)	14.15 (2.79)	182 (83)	50 (10)	28.82 (97.60)
13th(D1)Gear									
102.56 (76.48)	4569 (20.33)	8.42 (13.55)	1893	2.02	0.485 (0.295)	14.44 (2.85)	182 (83)	50 (10)	28.82 (97.60)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE DISENGAGED
FUEL CONSUMPTION CHARACTERISTICS

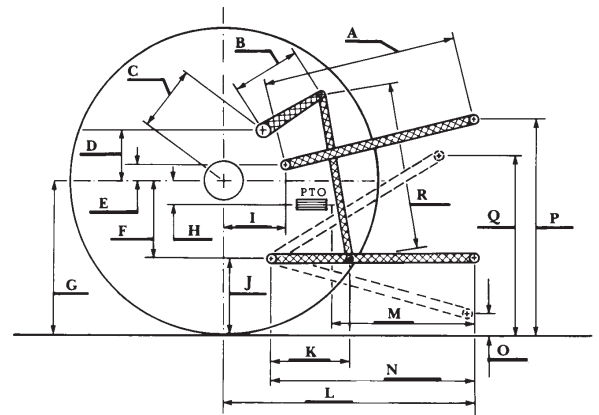
Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th(C1)Gear									
93.32 (69.59)	7289 (32.42)	4.80 (7.73)	2294	3.97	0.503 (0.306)	13.94 (2.75)	179 (82)	45 (7)	28.91 (97.90)
75% of Pull at Maximum Power—8th(C1) Gear									
74.40 (55.48)	5490 (24.42)	5.08 (8.18)	2400	2.83	0.552 (0.336)	12.70 (2.50)	176 (80)	52 (11)	28.90 (97.87)
50% of Pull at Maximum Power—8th(C1)Gear									
50.67 (37.78)	3667 (16.31)	5.18 (8.34)	2425	1.97	0.681 (0.414)	10.30 (2.03)	176 (80)	54 (12)	28.88 (97.80)
75% of Pull at Reduced Engine Speed—11th(C3) Gear									
74.59 (55.62)	5509 (24.51)	5.08 (8.17)	1664	2.92	0.486 (0.296)	14.43 (2.84)	175 (79)	53 (12)	28.90 (97.87)
50% of Pull at Reduced Engine Speed—11th(C3) Gear									
50.76 (37.85)	3671 (16.33)	5.19 (8.35)	1683	1.97	0.524 (0.318)	13.39 (2.64)	171 (77)	55 (13)	28.88 (97.80)
MAXIMUM POWER IN SELECTED GEARS									
5th(B1) Gear									
71.65 (53.43)	9352 (41.60)	2.87 (4.62)	2396	9.53	0.591 (0.359)	11.86 (2.34)	175 (80)	45 (7)	28.93 (97.97)
6th(B2) Gear									
83.38 (62.17)	8789 (39.09)	3.56 (5.73)	2372	6.01	0.548 (0.333)	12.80 (2.52)	176 (80)	47 (8)	28.92 (97.93)
7th(B3) Gear									
92.66 (69.10)	8346 (37.12)	4.16 (6.70)	2294	5.02	0.508 (0.309)	13.80 (2.72)	177 (80)	47 (8)	28.88 (97.80)
8th(C1) Gear									
93.32 (69.59)	7289 (32.42)	4.80 (7.73)	2294	3.97	0.503 (0.306)	13.94 (2.75)	179 (82)	45 (7)	28.91 (97.90)
9th(B4) Gear									
90.67 (67.62)	6546 (29.12)	5.19 (8.36)	2299	3.46	0.521 (0.317)	13.46 (2.65)	179 (81)	47 (8)	28.87 (97.77)
10th(C2) Gear									
92.37 (68.88)	5926 (26.36)	5.84 (9.41)	2296	3.00	0.508 (0.309)	13.80 (2.72)	179 (82)	46 (8)	28.90 (97.87)
11th(C3) Gear									
93.20 (69.50)	4970 (22.11)	7.03 (11.32)	2294	2.47	0.507 (0.308)	13.83 (2.72)	178 (81)	48 (9)	28.85 (97.70)
12th(C4) Gear									
88.73 (66.17)	3825 (17.02)	8.70 (14.00)	2302	1.86	0.529 (0.322)	13.25 (2.61)	180 (82)	49 (9)	28.83 (97.63)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II, IIIN

Quick Attach: No

Maximum force exerted through whole range:	5110 lbs (22.7 kN)(75 mm cylinders)	6398 lbs (28.5 kN)(80 mm cylinders)	8262 lbs (36.8 kN)(90 mm cylinders)
	<u>17.5 GPM pump</u>	<u>29 GPM pump</u>	
i) Sustained pressure at compensator cutoff:	2930 psi (202 bar)	2895 psi (200 bar)	
	two outlet sets combined		
ii) Pump delivery rate at minimum pressure and rated engine speed:	18.4 GPM(69.6 l/min)	31.0 GPM(117.4 l/min)	
iii) Pump delivery rate at maximum			
hydraulic power:	18.3 GPM(69.1 l/min)	29.7 GPM(112.4 l/min)	
Delivery pressure:	2731 psi (188 bar)	2508 psi (173 bar)	
Power:	29.1 HP (21.7 kW)	43.4 HP (32.4 kW)	
	single outlet set		
ii) Pump delivery rate at minimum pressure and rated engine speed:	18.1 GPM(68.6 l/min)	26.0 GPM(98.3 l/min)	
iii) Pump delivery rate at maximum			
hydraulic power:	18.0 GPM(68.2 l/min)	25.2 GPM(95.5 l/min)	
Delivery pressure:	2518 psi (174 bar)	2308 psi (159 bar)	
Power:	26.5 HP (19.7 kW)	34.0 HP (25.3 kW)	



HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	25.8	655	24.4	620
B	12.6	320	12.6	320
C	20.0	507	20.0	507
D	23.9	475	23.9	475
E	12.6	320	12.6	320
F	8.7	220	8.7	220
G	32.3	820	32.3	820
H	4.9	125	4.9	125
I	16.9	428	16.9	428
J	23.6	600	23.6	600
K	19.8	502	19.8	502
L	42.3	1076	42.3	1076
M	21.5	546	21.5	546
N	37.2	945	37.2	945
O	7.9	200	7.9	200
P	47.6	1210	42.6	1083
Q	34.6	880	34.6	880
R	31.3	795	31.3	795

THREE POINT HITCH PERFORMANCE(SAE Static test)

Observed maximum pressure psi. (bar)	2990 (206)				
Location:	lift cylinders				
Hydraulic oil temperature: °F (°C)	149 (65)				
Location:	hydraulic sump				
Category:	II, IIIN				
Quick attach:	No				
System pressure 2545 psi (176 Bar)					
with lift cylinders 2 x 75 mm					
Hitch point distance to ground level in. (mm)	7.9 (201)	14.9 (379)	21.9 (556)	28.9 (735)	36.1 (916)
Lift force on frame lb	6676	7154	7246	7032	6355
" " " " " " (kN)	(29.7)	(31.8)	(32.2)	(31.3)	(28.3)
with lift cylinders 2 x 80 mm					
Hitch point distance to ground level in. (mm)	7.9 (201)	16.3 (415)	23.9 (608)	31.9 (810)	40.0 (1015)
Lift force on frame lb	15683	9566	9428	9212	8322
" " " " " " (kN)	(69.8)	(42.6)	(41.9)	(41.0)	(37.0)
with lift cylinders 2 x 90 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.9 (403)	23.9 (606)	31.9 (811)	40.0 (1015)
Lift force on frame lb	18196	12491	12253	11980	10875
" " " " " " (kN)	(80.9)	(55.6)	(54.5)	(53.3)	(48.4)



JOHN DEERE 7130 DIESEL

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